

SWOT Modeling over Yangtze middle reaches

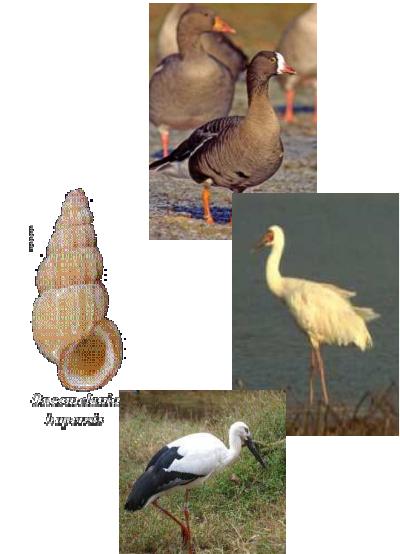
General context: Swot modeling over FloodPlain & Wetland

- Human stakes: economy, hazards, health
- Flood response
- Global biodiversity

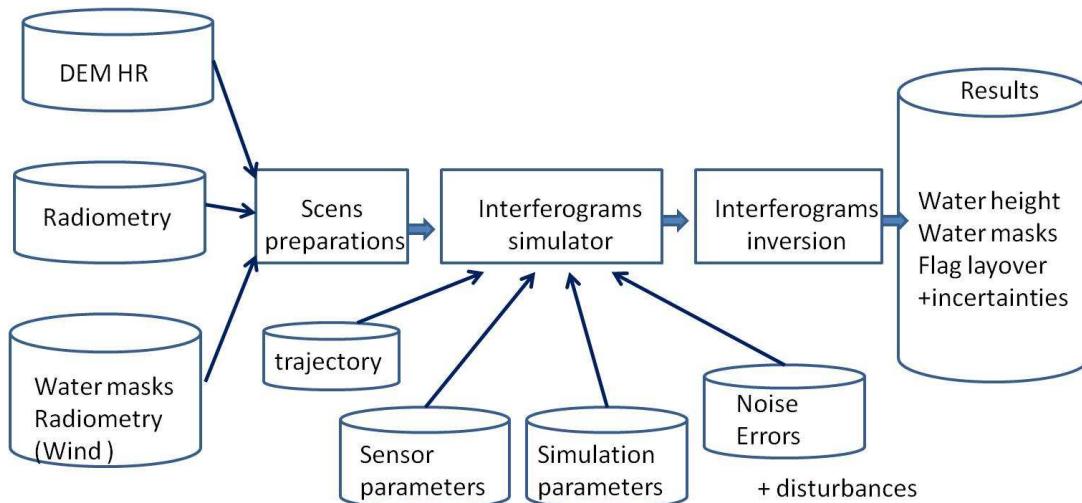
A general lake of information such as seasonal variations monitoring: great expect on SWOT

Set up a simulation workshop of SWOT data to generate valuable and precise information on river flows, reservoir and lakes storage and inundation extent

Application to Yangtze middle reaches: unique characteristic in term diversity of types of water bodies, water surface extent behaviors, huge water height variations



Approaches and objectives



Validate and run CNES-JPL SWOT Simulator

Yangtze middle watershed

Yangtze river: 1-2 km²

3G reservoir : 1084 km² 2 to 2.5km width

Dongting: 500-2500 km²,

Poyang: 700-3300 km²,

Anhui lakes: >10-100 km²

Chongqing

3GD reservoir

3GDam

Wuhan

Yangzte

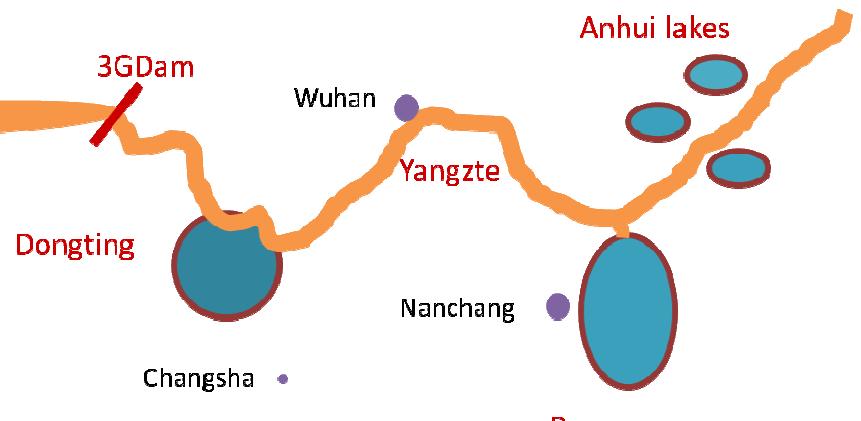
Dongting

Nanchang

Changsha

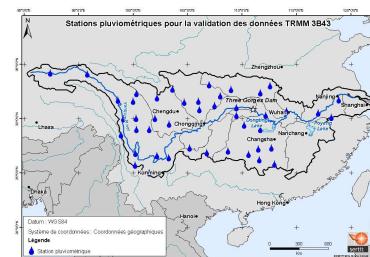
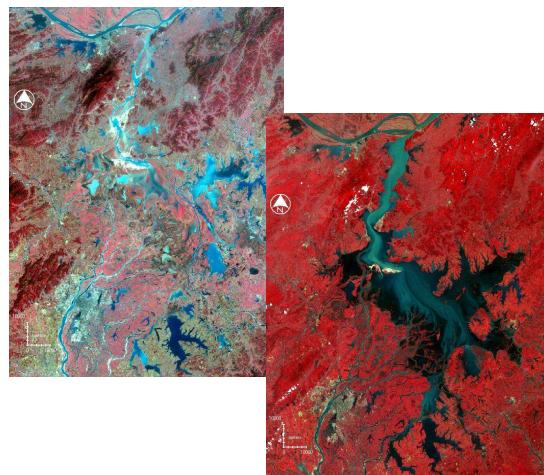
Anhui lakes

Poyang

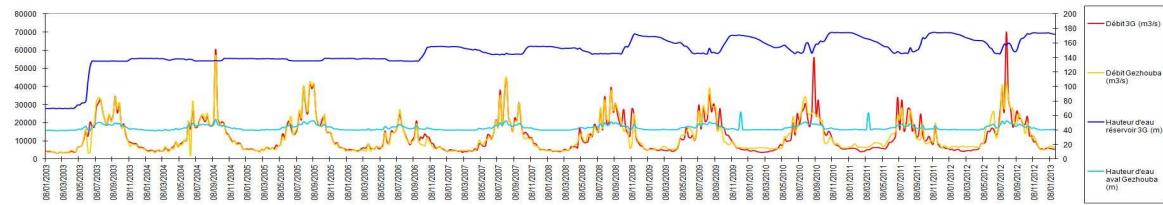


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SWOT, First Science Definition Team meeting, Pasadena, January 28-30, 2013

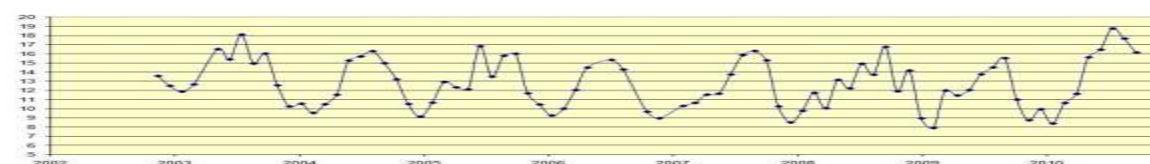
Workshop Yangtze database set up



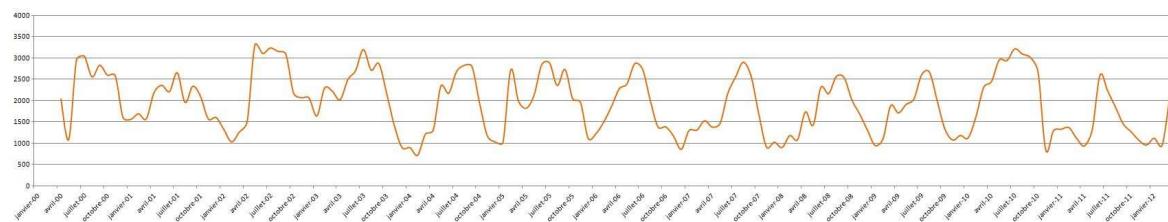
Water height from Gauge stations series



Water height from Altimetrical series, Jason, RA Envisat...



HR water extent series from MR and HR EO data (Take Five)



VHR DEM from Tandem X, Pléiades HR
Land Cover HR
Meteorological information (rain, wind etc ..)

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Answer to phase A SWOT issues

Validate the ability to generate SWOT hydrological products inscribed in the specifications of the mission to the flow of rivers every 10 km, and changes in water storage monitoring in lakes and reservoirs stocks of water contained in lakes, reservoirs and flood

- Investigate the spatial resolution, trying to define the limits of SWOT exploitation/applications to real water bodies (smallest, river swath, layover in steep sided reservoir..)
- Validate the measurements qualities (water height, storage characterization and monitoring)
- Investigate the revisit impact (at 30°N)

